

**Notes from Upper Rio Grande Basin Water Operations Review
Interdisciplinary NEPA Team Meeting; September 12, 2002;
1:00 PM; Corps of Engineers Conference Room, Albuquerque**

In Attendance:


Neal Ackerly, Dos Rios/Corps
Carolyn Brumfield, Corps
Mike Buntjer, USFWS
Ellen Dietrich, SAIC/Corps
William DeRagon, Corps
Rhea Graham, NMISC
Debbie Hathaway, SSPA/NMISC
Ernie Jahnke, Corps
Anne Janik, USBR
Jon Kehmeier, SWCA/NMISC
Conrad Keyes, Jr., Consultant to Corps
Bill Leibfried, SWCA/NMISC
Colleen Logan, R.F. Weston/Corps
Clay Mathers, Corps

Bob Mussetter, MEI/NMISC
Claudia Oakes, SWCA/NMISC
Dennis Oyenque, San Juan Pueblo
Chris Perez, USFWS
Nancy Purdy, USBR
Gary Rutherford, Corps
Gail Stockton, Corps
Jack Veenhuis, USGS
Scott Waltemeyer, USGS
Larry White, USBR
Dave Wilkins, USGS
Doug Wolf, Tetra Tech/Corps
Mark Yuska, USBR

- ❖ Gail Stockton opened the meeting and asked the technical team members to review the notes from the August meeting and submit any comments or changes by the end of the day.
 - The Riparian and Wetlands Technical Team distributed a revised list of model outputs that is also posted on Team Link that modifies and supplements the information in the August meeting notes.
- ❖ Mark Yuska, URGWOM Technical Team leader, distributed a handout on the content and development of the Planning Model of URGWOM to be used to analyze the flows under each action alternative. The items in his handout, with some additional points made during his presentation, are listed below.
 - 1st Planning Model Runs Targeted for Beginning of Year, 2003
 - Planning Model is stripped down in accounts from Water Operations and Accounting Models:
 - Planning Model has 5 SJ-C Accounts (Water Operations Model has 16):
 - Albuquerque
 - MRGCD
 - Cochiti Recreation Pool
 - Reclamation
 - Others




- Planning Model has 2 Rio Grande Accounts:
 - Non-Conservation Water
 - Conservation Water
- Initial Planning Model Runs—One 40-year sequence containing wet, dry, and average periods, oriented dryer than our 25-year current dataset. The 40-year period will be composed of a synthetic dataset designed to represent the conditions of the last 300 years.
 - Question: How will the sequence of wet and dry years be decided?
 - Answer: The goal is to have reasonable drought and wet periods with transitions.
Mark will ask for technical team review and input at the next ID NEPA Team meeting.
- Split Conditions—historical hydrology, future ground conditions
 - Mark will need technical team input on parameters that should be included but that cannot be derived from the historic dataset, such as trends in irrigated agriculture and population growth. URGWOM calibration is static now, and does not represent future conditions. He will need input on how to change the model to analyze future conditions. The URGWOM Technical Team also must determine how sensitive the model is to future changes in the system.
- Planning Rules begin from tested stage of Water Operations Rules
- Not sure our computers can handle 40-years of data—may have to split runs
- Using a “fuzzy forecast” method to have El Vado make decisions on non-perfect forecast information
- Trying to add flexibilities like varying Indian Storage calculated volumes
- El Vado to be converted to a Level Power Reservoir – we have it as a Storage Reservoir
- Need trend information like Albuquerque groundwater pumpage, wastewater return flows, irrigated acreages. 1st runs may not do much of this
- Add a diversion at Paseo Del Norte, and split the reach, for Albuquerque surface water diversions beginning 2006, and how/what they will divert
- Sediment is displacing SJ-C contractor space in Abiquiu: Need details on how to handle this
- We are staying with Waivers as is: A switch that allows everyone or no-one for the entire period
- Our physical model calibration is static, but the system is dynamic: Can we fairly represent the next 40-years? We may need to adjust calibration
- How often do RG Compact Credit/Debit computations need to be made to operate? Annual, monthly, or daily?
- SJ-C delivery times are not cast-in-stone: Model rules have to decide.
- Putting in a user-variable minimum storage pool for Elephant Butte
- Need to consider minimizing evaporation losses at Caballo and Elephant Butte, by timing deliveries to Caballo
- Need to force water out of Caballo to meet target storage

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- ❖ Gail reviewed a handout that Rhea Graham developed to identify all resource teams that need the same information (listed by each resource team at the last meeting) and the support team that would provide the information. She also noted a few items that may not be directly addressed by a support team. **All team members should review this list to be aware of what teams need to share data and to ensure that they are able to obtain all data needed to conduct their analyses.**
 - ❖ For the rest of the meeting, technical teams worked within their groups to formulate answers to the two questions remaining from the August workshop. The purpose of these two workshops was to identify the 1) output of technical team analyses, 2) methods and models to accomplish the analyses, and 3) priorities for analyses. The first question, “What types of output do you plan to use to analyze the impacts to your resource(s)?” was addressed at the last workshop and summarized in the August meeting notes.
 - ❖ Following are the items listed on the flip charts at the meeting in response to the last two questions above. The items are grouped by technical team with the responses to both questions listed under each team.
 - How will this output be displayed or presented in the EIS (maps, graphs, statistics, matrix, values)?
 - Cultural Resources
 - Qualitative analyses by reach
 - Baseline map showing areas of archaeological sites of concern or tribal/pueblo areas of concern
 - Summary tables with characteristics of archaeological sites and contemporary cultural concerns by reach
 - Aquatic Systems
 - Maps showing aquatic habitat and changes by alternative
 - Flow duration curves
 - Flood exceedance curves
 - Possible impact matrix
 - Exceedance curve of reservoir elevation change during spawning season over 40-year period
 - Exceedance curves and water depths for reservoirs (40 year return period)
 - Annual hydrographs by reach and alternative
 - Riparian and Wetlands
 - Tables/charts of areal extent of vegetation types by reach from 1984 and 2002
 - Areas of inundation in acres—tabular data with an example on a map (with an example of a FLO-2D run)
 - Areas of overbank flooding duration in acre-days—tabular data with an example on a map (with an example of a FLO-2D run)
 - Maximum extent of potential scouring (values in text or tabular)
 - Tabular data on the areas of cottonwood/willow regeneration (native vegetation)

- Tabular data—areas of suitable southwestern willow flycatcher habitat by alternative
- Tabular data—acres of occupied southwestern willow flycatcher territories (existing baseline)
- Hydrographs
- Land Use, Socioeconomics, Agriculture, Recreation, Environmental Justice
 - Hydropower
 - ◆ Tabular data showing the flows at each facility
 - ◆ Tabular data showing the power generated by each facility
 - Agriculture
 - ◆ Flows into diversion structures
 - ◆ Changes in cropping patterns and the cost of those changes, by alternative
 - Land Use
 - ◆ Flooding of areas with structures
 - ◆ Overbank effects on the Rio Chama
 - Recreation
 - ◆ Tabular data—water depth and surface areas used to determine effects on recreation use and regional expenditures
- Water Quality
 - Map of water quality reaches
 - Tables and graphs of baseline conditions and trends
 - Tables and graphs of water quality response by alternative
 - Matrix showing the number of days that water quality standards are exceeded in each reach
 - Matrix comparing exceedance of water quality standards to tribal and state standards and antidegradation statements
- How will these results be accomplished? What methods or approaches will you use to analyze impacts?
 - Cultural Resources
 - Federal legislation including National Historic Preservation Act, Native American Graves Repatriation Act, State Historic Preservation Act
 - Determine if sites are listed on the State or National Register of Historic Places
 - Expect the greatest impacts within 1 kilometer of the river
 - Characterize the size and age of sites, and whether they are likely to contain burials
 - Archaeological site variables will be queried by FLO-2D cells, as well as polygon, point and buffer analyses in GIS

- Aquatic Systems
 - Probability/exceedance curves related to hydrology and habitat in the river and reservoirs
 - Potential qualitative analysis of water quality and fisheries
 - Qualitative analysis of interaction of trophic levels
 - Useable habitat by species and alternative
 - Surface area of reservoirs
- Water Quality
 - Identify reaches with data and gaps
 - Correlate conditions with hydrograph, operations, and stage seasonally and/or monthly
 - Use existing data to calibrate water quality models
 - Model changes by alternative
 - Compare results to standards
- Riparian and Wetlands
 - Develop algorithm to correlate river stage change and groundwater declines
 - Develop acreage of potential native vegetation regeneration
 - Determine acreage of Hink and Ohmart vegetation types
 - Overlay analyses of vegetation types and FLO-2D runs to determine the extent and duration of overbank flooding
 - Apply statistical tests to evaluate various parameters and compare alternatives
 - Develop rating matrix for 4 primary resource areas: riparian vegetation, threatened and endangered species, wildlife, and native vegetation regeneration potential
 - Apply a common scale to rank alternatives
- Land Use, Socioeconomics, Agriculture, Recreation, Environmental Justice
 - Hydropower: Convert flows to kilowatts using URGWOM and determine the revenues generated by each facility
 - Agriculture: Use URGWOM to calculate the flows into diversion structures
 - Recreation: Use URGWOM and FLO-2D to determine effects on recreation areas and calculate costs of impacts.

- ❖ Elaine Hibbard, from the Middle Rio Grande Water Assembly outreach committee, told the group that they are seeking input on alternatives for managing water in preparation for developing the regional water plan. The Water Assembly is trying to connect with state and federal agencies in a meeting (early October) to discuss how best to coordinate their efforts. She will notify those who signed up of the meeting arrangements.

 ❖ **The next meeting of the ID NEPA Team will be held on October 10 at 1:00 p.m. at the Corps. It will most likely be another workshop for all technical team members.**